

REMARKS

In this paper, claims 35-56 are canceled, and claims 57-65 have been added. After entry of the above amendment, claims 57-65 are pending, and claims 1-56 have been canceled.

Claims 35-42 were rejected under 35 U.S.C. §103(a) as being unpatentable over Richards (GB 267,796) in view of Ernest (GB 356,497). Claims 35-56 have been canceled, so this basis for rejection is considered moot for those claims. The following comments apply to new claims 57-63.

New claim 57 recites a plurality of first splines disposed at a first end portion of an axle body, a plurality of second splines disposed at a second end portion of the axle body, and a projection extending radially outwardly from the first end portion of the axle body. The plurality of first splines extend radially outwardly from an outer peripheral surface of the axle body for engaging a splined surface of a bicycle crank arm, but the plurality of second splines do not extend radially outwardly relative to the outer peripheral surface of the axle body. This structure allows for easy insertion of the second end of the axle body through the crank arm while allowing the plurality of first splines to engage a splined surface of the bicycle crank arm, with the projection preventing further axial movement of the crank arm. Another crank arm then can be mounted to the second splines. This facilitates assembly of the crankset while reducing manufacturing costs of the axle.

Richards discloses a bolt (11) with a head on one end that abuts against a side surface of a first crank arm (7). The other end of bolt (11) is threaded for attachment to a second crank arm (7a) through a nut (12). Richards fails to disclose a plurality of first splines that extend radially outwardly from an outer peripheral surface of the axle body for engaging a splined surface of the bicycle crank arm. Richards also fails to disclose a plurality of second splines that do not extend radially outwardly relative to the outer peripheral surface of the axle body.

Ernest discloses an axle (1) with flats (4) and (15) disposed on opposite ends of the axle body. As with Richards, Ernest fails to disclose a plurality of first splines that extend radially outwardly from an outer peripheral surface of the axle body for engaging a splined surface of the

bicycle crank arm. Ernest also fails to disclose a plurality of second splines that do not extend radially outwardly relative to the outer peripheral surface of the axle body.

Neither Richards nor Ernest discloses or suggests a crank axle with two sets of splines, wherein one set of splines projects radially outwardly from an outer peripheral surface of the axle body, another set of splines does not project radially outwardly from an outer peripheral surface of the axle body, and a projection is disposed at the end of the axle body that contains the projecting splines.

Claims 43-56 were rejected under 35 U.S.C. §103(a) as being unpatentable over Richards in view of Ernest and Yamanaka (EP 756,991). Claims 35-56 have been canceled, so this basis for rejection is considered moot for those claims. The following comments apply to new claims 57-63.

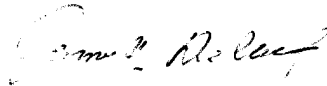
Yamanaka discloses an axle body wherein a plurality of splines are formed on both ends of the axle body. Neither set of splines extends radially outwardly from an outer peripheral surface of the axle body. Thus, Yamanaka fails to suggest the asymmetrical arrangement wherein a plurality of first splines extend radially outwardly from an outer peripheral surface of the axle body for engaging a splined surface of the bicycle crank arm in combination with a plurality of second splines that do not extend radially outwardly relative to the outer peripheral surface of the axle body.

Accordingly, it is believed that the rejections under 35 U.S.C. §103 have been overcome by the foregoing amendment and remarks, and it is submitted that the claims are in condition for allowance. Reconsideration of this application as amended is respectfully requested. Allowance of all claims is earnestly solicited.

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PATENT

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "James A. Deland".

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